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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,567	10/31/2003	Surya Varanasi	112-0134US	1584

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EXAMINER	
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ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/699,567	VARANASI ET AL.	
	Examiner	Art Unit	
	Chandrahas Patel	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 July 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,6-22,26-42,46-62,66-82,86-101 and 103-105* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 2, 6-22, 26-42, 46-62, 66-82, 86-101, 103-105* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 7/17/2008 have been fully considered but they are not persuasive.

Applicant argues that Yamada does not teach at least one logical port having corresponded a plurality of physical ports. Examiner agrees with this. However, Munter teaches this limitation as described in the office action.

Applicant further argues that Munter does not teach at least one logical port having corresponded a plurality of physical ports to from a trunked group. However, examiner disagrees. Munter teaches a logical port includes a bundle of ports which is the trunked group. Munter further teaches the corresponded physical port can be any of the plurality of physical ports exiting the switch. Fig. 4, 40 shows connecting any of the physical ports which form the logical port as described in Col. 5, lines 20-28.

Applicant argues that Yamada does not teach selecting a physical port based on a tag added to the frame after the frame enters the switch. However, examiner disagrees. Yamada clearly teaches adding the tag after the frame enters the switch and selecting a physical port based on the tag. Applicant argues that Yamada makes a selection of physical port before the tag is added, the opposite of the claim requirement where the selection is based on the tag. However, examiner disagrees. The claim requires a selection of physical port based on tag added to the frame after the frame enters the switch. Yamada teaches applying a label and transmitting through appropriate physical port based on the label [See Fig. 3].

Examiner withdraws 35 USC 112 rejection to claims 1, 21, 41, 61, 81 and 101 in response to submitted arguments.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1, 2, 6-22, 26-42, 46-62, 66-82, 86-101, 103-105 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (USPN 7,203,762) in view of Munter (USPN 7,209,659) and further in view of Battle et al. (USPN 7,088,713).

Regarding claim 1, Yamada teaches a method of routing a flow of frames **[Abstract]** comprising: applying a correspondence between plurality of logical ports and a plurality of physical ports of a switch **[Fig. 6, Virtual sending ports & MPLS-SIDE physical ports]**; frames exiting the switch via the physical ports **[Fig. 14, S24]**, a selected physical port for at least one of the frames exiting the switch being selected based at least in part on the correspondence **[Fig. 14, S23, physical port is determined based on mapping shown in L1 table in Fig. 6]**.

However, Yamada does not teach at least one logical port having corresponded a plurality of physical ports to form a trunked group wherein frames in a trunked group are delivered in order; balancing frame traffic through the switch using the plurality of logical ports, with any frames exiting the switch via physical ports forming a trunked group being balanced over the physical ports forming the trunked group; and all ports operate at the same rate.

Munter teaches at least one logical port having corresponded a plurality of physical ports to form a trunked group, wherein the corresponded physical port can be any of the plurality of

physical ports exiting the switch **[Col. 5, lines 20-31]** wherein frames in a trunked group are delivered in order **[Col. 6, lines 24-29]**; balancing frame traffic through the switch using the plurality of logical ports **[Col. 5, lines 32-34]**, with any frames exiting the switch via physical ports forming a trunked group being balanced over the physical ports forming the trunked group **[Col. 6, lines 24-29]**. Battle teaches all ports operate at the same rate **[Fig. 2, all ports are at 10 Gbps]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to balance the traffic at logical port and have in order deliver of frames since the links have different capacity therefore each link has different rate which would cause imbalance which would need to balance out **[Col. 5, lines 32-34]** and operate all ports at the same rate so that all ports can be configured to operate in a specific mode **[Col. 6, lines 49-51]**.

Regarding claims 2, 14, 22, 34, 42, 54, 62, 74, 82, 94, Yamada further teaches physical port for each of the frames exiting the switch is selected based on the correspondence between logical and physical port **[Fig. 14, S23, where physical port is determined based on mapping shown in L1 table in Fig. 6]**.

Regarding claims 6, 9, 26, 29, 46, 49, 66, 69, 86, 89, 103, 104, Yamada further teaches balancing comprises applying a pseudo-random process to select a particular logical port as an egress port; the particular logical port is being selected for a particular frame exiting switch **[Col. 11, lines 9-20]**.

Regarding claims 7, 10, 27, 30, 47, 50, 67, 70, 87, 90, Battle teaches applying a hash function when selecting ports **[Col. 6, lines 10-20]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply a hash function when selecting ports so that trunk can be selected based destination address and source address **[Col. 6, lines 10-20]**.

Regarding claims 8, 11, 28, 31, 88, 91, Yamada further teaches correspondence is employed to determine the physical port to which to route particular frame based at least in part on the logical port selected as particular logical port **[Col. 11, lines 13-20]**.

Regarding claims 12, 15, 32, 35, 52, 55, 72, 75, 92, 95, 105, Yamada further teaches applying weights to select a particular logical port of the switch as an egress port for a particular frame exiting the switch **[Col. 5, lines 9-15, service-dependent forwarding applies weights to paths where a path will be selected by a specific port]**.

Regarding claim 13, 16, 33, 36, 51, 53, 56, 71, 73, 76, 93, 96, Yamada further teaches correspondence is employed to determine the physical port to which to route particular frame based on the logical port selected as a particular port **[Col. 11, lines 13-20]**.

Regarding claims 17, 19, 37, 39, 57, 59, 77, 79, 97, 99, Yamada further teaches a selected physical port is selected based on a source tag and/or a destination tag added to the frame after the frame enters switch **[Col 8, lines 8-13]**.

Regarding claims 18, 20, 38, 40, 58, 60, 78, 80, 98, 100, Yamada further teaches source tag and/or destination tag is stripped off before the frame exits the switch **[Fig. 9, S12]**.

Regarding claim 21, Yamada teaches an apparatus **[Fig. 7, 20]** comprising: a switch **[Fig. 7, 20]** including a processor **[Fig. 7, 22]** and memory **[Col. 4, lines 56-59, switch has a routing table which is stored in memory]**; the switch further including a plurality of logical and a plurality of physical ports, and having the capability to route a flow of frames exiting the

switch **[Fig. 6, Virtual sending ports and MPLS-side physical ports]**; the switch being adapted to apply a correspondence between plurality of logical ports and a plurality of physical ports of a switch **[Fig. 6, Virtual sending port & MPLS-SIDE physical port]**; frames exiting the switch via the physical ports **[Fig. 14, S24]**, a selected physical port for at least one of the frames exiting the switch being selected based at least in part on the correspondence **[Fig. 14, S23, physical port is determined based on mapping shown in L1 table in Fig. 6]**.

However, Yamada does not teach at least one logical port having corresponded a plurality of physical ports to form a trunked group wherein frames in a trunked group are delivered in order; balancing frame traffic through the switch using the plurality of logical ports, with any frames exiting the switch via physical ports forming a trunked group being balanced over the physical ports forming the trunked group and all ports operate at the same rate.

Munter teaches at least one logical port having corresponded a plurality of physical ports to form a trunked group, wherein the corresponded physical port can be any of the plurality of physical ports exiting the switch **[Col. 5, lines 20-31]** wherein frames in a trunked group are delivered in order **[Col. 6, lines 24-29]**; balancing frame traffic through the switch using the plurality of logical ports **[Col. 5, lines 32-34]**, with any frames exiting the switch via physical ports forming a trunked group being balanced over the physical ports forming the trunked group **[Col. 6, lines 24-29]**. Battle teaches all ports operate at the same rate **[Fig. 2, all ports are at 10 Gbps]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to balance the traffic at logical port and have in order deliver of frames since the links have different capacity therefore each link has different rate which would cause imbalance which

would need to balance out **[Col. 5, lines 32-34]** and operate all ports at the same rate so that all ports can be configured to operate in a specific mode **[Col. 6, lines 49-51]**.

Regarding claim 41, Yamada teaches a switch fabric **[Fig. 7]** comprising: at least a first switch **[Fig. 7, 10]** and a second switch **[Fig. 7, 20]**; the first switch including a processor **[Fig. 7, 22]** and memory **[Col. 4, lines 56-59, switch has a routing table which is stored in memory]**; the switch further including a plurality of logical and a plurality of physical ports, and having the capability to route a flow of frames exiting the switch **[Fig. 6, Virtual sending ports and MPLS-side physical ports]**; the switch being adapted to apply a correspondence between plurality of logical ports and a plurality of physical ports of a switch **[Fig. 6, Virtual sending port & MPLS-SIDE physical port]**; frames exiting the switch via the physical ports **[Fig. 14, S24]**, a selected physical port for at least one of the frames exiting the switch being selected based at least in part on the correspondence **[Fig. 14, S23, physical port is determined based on mapping shown in L1 table in Fig. 6]**.

However, Yamada does not teach at least one logical port having corresponded a plurality of physical ports to form a trunked group wherein frames in a trunked group are delivered in order; balancing frame traffic through the switch using the plurality of logical ports, with any frames exiting the switch via physical ports forming a trunked group being balanced over the physical ports forming the trunked group and all ports operate at the same rate.

Munter teaches at least one logical port having corresponded a plurality of physical ports to form a trunked group, wherein the corresponded physical port can be any of the plurality of physical ports exiting the switch **[Col. 5, lines 20-31]** wherein frames in a trunked group are delivered in order **[Col. 6, lines 24-29]**; balancing frame traffic through the switch using the

plurality of logical ports **[Col. 5, lines 32-34]**, with any frames exiting the switch via physical ports forming a trunked group being balanced over the physical ports forming the trunked group **[Col. 6, lines 24-29]**. Battle teaches all ports operate at the same rate **[Fig. 2, all ports are at 10 Gbps]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to balance the traffic at logical port and have in order deliver of frames since the links have different capacity therefore each link has different rate which would cause imbalance which would need to balance out **[Col. 5, lines 32-34]** and operate all ports at the same rate so that all ports can be configured to operate in a specific mode **[Col. 6, lines 49-51]**.

Regarding claims 48, 68, Yamada further teaches correspondence is employed to determine the physical port to which to route particular frame based at least in part on the logical port selected as particular port **[Col. 11, lines 13-20]**.

Regarding claim 61, Yamada teaches a network **[Fig. 27]** comprising: a host **[Fig. 27, 41]**; a physical storage unit **[Fig. 27, 41, 41 is a desktop computer which has physical storage]**; a first switch **[Fig. 7, 10]** and a second switch **[Fig. 7, 20]** communicatively coupled to form a switch fabric **[Fig. 27, 401 and 402 are switches described in more detail in Fig. 7]**; the first switch and second switch further communicatively coupled to the host and physical storage unit **[Fig. 27, 401 and 402 are coupled to 41]**; the first switch including a processor **[Fig. 7, 22]** and memory **[Col. 4, lines 56-59, switch has a routing table which is stored in memory]** and further including a plurality of logical and a plurality of physical ports **[Fig. 6, Virtual sending ports and MPLS-side physical ports]**; the switch being adapted to apply a correspondence between plurality of logical ports and a plurality of physical ports of a switch **[Fig. 6, Virtual**

sending port & MPLS-SIDE physical port]; frames exiting the switch via the physical ports **[Fig. 14, S24]**, a selected physical port for at least one of the frames exiting the switch being selected based at least in part on the correspondence **[Fig. 14, S23, physical port is determined based on mapping shown in L1 table in Fig. 6]**.

However, Yamada does not teach at least one logical port having corresponded a plurality of physical ports to form a trunked group wherein frames in a trunked group are delivered in order; balancing frame traffic through the switch using the plurality of logical ports, with any frames exiting the switch via physical ports forming a trunked group being balanced over the physical ports forming the trunked group and all ports operate at the same rate.

Munter teaches at least one logical port having corresponded a plurality of physical ports to form a trunked group, wherein the corresponded physical port can be any of the plurality of physical ports exiting the switch **[Col. 5, lines 20-31]** wherein frames in a trunked group are delivered in order **[Col. 6, lines 24-29]**; balancing frame traffic through the switch using the plurality of logical ports **[Col. 5, lines 32-34]**, with any frames exiting the switch via physical ports forming a trunked group being balanced over the physical ports forming the trunked group **[Col. 6, lines 24-29]**. Battle teaches all ports operate at the same rate **[Fig. 2, all ports are at 10 Gbps]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to balance the traffic at logical port and have in order deliver of frames since the links have different capacity therefore each link has different rate which would cause imbalance which would need to balance out **[Col. 5, lines 32-34]** and operate all ports at the same rate so that all ports can be configured to operate in a specific mode **[Col. 6, lines 49-51]**.

Regarding claim 81, Yamada teaches an article comprising: a storage medium having stored thereon instructions, that when executed, result in performance of a method of routing a flow of frames **[Col. 7, lines 33-36]** comprising: applying a correspondence between plurality of logical ports and a plurality of physical ports of a switch **[Fig. 6, Virtual sending ports & MPLS-SIDE physical ports]**; frames exiting the switch via the physical ports **[Fig. 14, S24]**, a selected physical port for at least one of the frames exiting the switch being selected based at least in part on the correspondence **[Fig. 14, S23, physical port is determined based on mapping shown in L1 table in Fig. 6]**.

However, Yamada does not teach at least one logical port having corresponded a plurality of physical ports to form a trunked group wherein frames in a trunked group are delivered in order; balancing frame traffic through the switch using the plurality of logical ports, with any frames exiting the switch via physical ports forming a trunked group being balanced over the physical ports forming the trunked group and all ports operate at the same rate.

Munter teaches at least one logical port having corresponded a plurality of physical ports to form a trunked group, wherein the corresponded physical port can be any of the plurality of physical ports exiting the switch **[Col. 5, lines 20-31]** wherein frames in a trunked group are delivered in order **[Col. 6, lines 24-29]**; balancing frame traffic through the switch using the plurality of logical ports **[Col. 5, lines 32-34]**, with any frames exiting the switch via physical ports forming a trunked group being balanced over the physical ports forming the trunked group **[Col. 6, lines 24-29]**. Battle teaches all ports operate at the same rate **[Fig. 2, all ports are at 10 Gbps]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to balance the traffic at logical port and have in order deliver of frames since the links have different capacity therefore each link has different rate which would cause imbalance which would need to balance out **[Col. 5, lines 32-34]** and operate all ports at the same rate so that all ports can be configured to operate in a specific mode **[Col. 6, lines 49-51]**.

Regarding claim 101, Yamada teaches an article comprising: a storage medium having stored thereon instructions, that when executed, result in performance of a method of initializing a switch to route a flow of frames **[Col. 7, lines 33-39]** comprising: initializing a correspondence between a plurality of logical ports and a plurality of physical ports of a switch **[Fig. 6, Virtual sending ports & MPLS-SIDE physical ports]**; frames exiting the switch via the physical ports **[Fig. 14, S24]**, a selected physical port for at least one of the frames exiting the switch being selected based at least in part on the correspondence **[Fig. 14, S23, physical port is determined based on mapping shown in L1 table in Fig. 6]**.

However, Yamada does not teach at least one logical port having corresponded a plurality of physical ports to form a trunked group wherein frames in a trunked group are delivered in order; balancing frame traffic through the switch using the plurality of logical ports, with any frames exiting the switch via physical ports forming a trunked group being balanced over the physical ports forming the trunked group and all ports operate at the same rate.

Munter teaches at least one logical port having corresponded a plurality of physical ports to form a trunked group, wherein the corresponded physical port can be any of the plurality of physical ports exiting the switch **[Col. 5, lines 20-31]** wherein frames in a trunked group are delivered in order **[Col. 6, lines 24-29]**; balancing frame traffic through the switch using the

plurality of logical ports **[Col. 5, lines 32-34]**, with any frames exiting the switch via physical ports forming a trunked group being balanced over the physical ports forming the trunked group **[Col. 6, lines 24-29]**. Battle teaches all ports operate at the same rate **[Fig. 2, all ports are at 10 Gbps]**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to balance the traffic at logical port and have in order deliver of frames since the links have different capacity therefore each link has different rate which would cause imbalance which would need to balance out **[Col. 5, lines 32-34]** and operate all ports at the same rate so that all ports can be configured to operate in a specific mode **[Col. 6, lines 49-51]**.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chandrahas Patel whose telephone number is (571)270-1211. The examiner can normally be reached on Monday through Thursday 7:30 to 17:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ricky Ngo/
Supervisory Patent Examiner, Art Unit 2616

/Chandrahas Patel/
Examiner, Art Unit 2616